TESTIMONY OF
Thomas L. Sanders
President
American Nuclear Society

BEFORE THE
BLUE RIBBON COMMISSION ON AMERICA'S NUCLEAR FUTURE
May 19, 2009

Chairmen Hamilton and Scowcroft, members of the Commission, thank you for the opportunity to testify. I am here on behalf of 11,000 men and women of the American Nuclear Society who believe passionately that nuclear science and technology has a central role to play in ensuring our national security, our economic prosperity and quality of life, and our environment. No group of individuals will be more directly impacted by the decisions this Commission makes, and none are better positioned to provide the technical know-how we will need to develop and execute an effective, durable, and flexible nuclear fuel cycle for the 21st Century and beyond.

Let me say from the outset that the ANS does not represent any specific interest within the nuclear enterprise. I am not here on behalf of the utilities, or vendors of nuclear goods and services, or the government agencies and national laboratories that conduct nuclear related research and development, or the universities that educate our nuclear scientists and engineers. I am here to represent the "general interest" of the nuclear community to the extent that it can be defined and articulated today.

As ANS President, I have created the Special Committee on Used Nuclear Fuel Management Options. The purpose of this committee, co-chaired by Audeen Fentiman of Purdue University and Margaret Chu, former director of the DOE Office of Civilian Radioactive Waste Management, is to evaluate the technical advantages and challenges of various fuel cycle alternatives and prepare a report for the November, 2010 ANS meeting. With that in mind, my remarks today will be more general in nature.

I am not envious of the job you have before you. The Blue Ribbon Commission exists because US nuclear waste policy is essentially a failure. The federal government has spent nearly $10 billion over a period of more than 40 years to develop a long-term repository for nuclear waste, with practically nothing to show for it.

ANS members are uniformly hopeful that the Commission will provide a constructive "reset" to US fuel cycle policy, but we are also realistic about the challenges and limitations you face.

I do not expect the Commission will seek to select candidate sites for long-term geological repositories to replace Yucca Mountain, nor do I imagine it will

recommend a specific technological pathway to reprocess and/or close the fuel cycle, as the last administration did with the Global Nuclear Energy Partnership. If these issues are off the table, it seems to me the only potential game-changer left is reforming the "operational mechanics" of the fuel cycle.

Clearly, the system we have today is unworkable. Taxpayers contribute to an illusory "trust fund" that serves mostly to mask the federal deficit. The men and women of the Department of Energy make an honest effort to comply with its legal mandate to take possession of spent fuel, but are hindered at every turn by a suffocating web of contradictory laws, regulations, and bureaucratic culture. Indeed, the only winners in this sad saga seem to be the lawyers who are getting rich helping utilities sue the government to pay for their stop-gap measures to manage their spent fuel inventory. The system is broken, and needs to be changed fundamentally.

Also, consider that while the US spent fuel inventory today is comprised of light water reactor fuel, that will likely change in the years to come as high temperature gas and sodium cooled fast reactors penetrate the global marketplace. If the situation today seems intractable, imagine 20 or 30 years from now when the US may have three distinct fuel cycles to manage. It is time to recognize that a new framework is needed, one that provides greater flexibility to manage multiple fuel cycles in a timely and efficient manner with a higher level of input from the nuclear industry. The ANS has adopted a formal position statement (http://www.ans.org/pi/ps/docs/ps22.pdf) supporting the creation of an independent entity to entity to oversee management of the current and expected stockpile of U.S. used nuclear fuel. This entity should have direct access to nuclear waste fees; be minimally reliant on the annual congressional appropriations for funding; have a governance structure that promotes long-range planning and continuity of leadership; possess authority to provide consolidated interim storage, nuclear fuel recycling, and geologic disposal consistent with laws, policies, and regulations; and be given the authority to support U.S. national security and nonproliferation objectives on a full-cost reimbursement basis.

I strongly urge the Commission to make management reform of the nuclear fuel cycle a principal area of focus.

In addition, I urge the Commission to recognize that US fuel cycle policy must anticipate the need to support so-called cradle-to-grave fuel solutions for our international partners. The world is set to embark on a massive expansion of nuclear energy generation capacity with more than 60 nations actively considering the addition of nuclear to their energy portfolios. I, and most of my colleagues in the ANS, believe strongly that the US must help facilitate this global nuclear renaissance through the export of American nuclear plants and technology in order to ensure the highest levels of operational safety while minimizing the threat of materials diversion of nuclear proliferation.

The current administration has on numerous occasions voiced its interest in pursuing cradle-to-grave solutions as a tool to assist developing nations in capitalizing on nuclear energy without the need for them to indigenously develop sensitive technologies such as enrichment and reprocessing. Cradle-to-grave services will require that we have the capacity to accept spent nuclear fuel from partner nations and recycle and/or dispose of it as necessary. Let me be clear - this means we will need both the operational and the political wherewithal to accept what some will define as “waste” from other nations.

I also urge the Commission to consider the larger context of US fuel cycle policy, and how it has changed since the last time comprehensive nuclear waste legislation was passed by Congress. Our current policy was developed 20 to 30 years ago under the broad assumption that the existing fleet of nuclear plants would be phased out at the end of their design lifetimes and replaced with nonnuclear generation capacity. Under this scenario, the adoption of a once through nuclear fuel cycle with spent fuel assemblies being employed in long-term geologic repository made complete sense. However, in the intervening 30 years, the fundamental assumptions upon which our current policy is predicated have changed, and changed dramatically.

Under any credible scenario, the US will have to dramatically increase the percentage of electricity derived from nuclear energy in order to meaningfully reduce CO2 emissions without negatively impacting our economic competitiveness and quality of life. There is also an emerging consensus that electrification of the transportation sector, through plug-in hybrids, electric cars, street cars, high-speed rail, etc., is the easiest and most realistic way to reduce our dependence on foreign petroleum and reduce emissions. This will further heighten the need for large quantities of clean, dependable baseload generation that only nuclear can provide.

What does this mean for US policy? Above all, it means that while there is no immediate crisis in used fuel management, we still must move with some sense of urgency to prepare for a much larger volume fuel cycle in the decades ahead.

Lastly, and perhaps most importantly, I encourage the Commission to recognize that the "nuclear waste problem" is and has always been largely a political problem: driven by fear, prone to exaggerated interpretation of risks, and manipulated by those with narrow political agendas. From an engineering perspective, effective management of the backend of the nuclear fuel cycle is a clearly achievable objective, and there are any number of realistic technological pathways to meet it. Of course each has its own set of implementation challenges, but the general consensus in the nuclear community is that there are no hard technological showstoppers that would prevent us from success. In short, no matter what fuel cycle we ultimately choose to pursue - once through, reprocessing, full actinide recycle, even some combination of all - you can be assured that the men and women of the US nuclear community have the skill, knowledge, and commitment to make it a reality.

Nuclear energy is no longer the polarizing issue it once was. Consider that the Obama and Bush administrations, while ideologically divergent in many respects, have both recognized the federal need for more nuclear energy. Likewise in Congress, there is an increasing bipartisan consensus that nuclear must be a central solution to our energy and environmental challenges.

Public support for nuclear energy, as reflected in opinion polls, stands at an all time high. Nonetheless, there is still an opportunity for misunderstanding, fostered in some cases by willful manipulation, on matters related to nuclear technology, especially waste. As such, the ANS believes it is appropriate for the federal government to actively facilitate and promote a higher level of "nuclear literacy". The ANS stands ready to partner with the federal government to accomplish this task.

In closing, I urge you to recognize that in your final recommendations, there can be no relevance without controversy. If there was a technically elegant, politically expedient option for managing the backend of the nuclear fuel cycle, we would have adopted it long ago. So I challenge you to do more than just present recommendations that represent the lowest common political denominator. Instead, let the science guide you, even if it means rocking the political boat a little.

Thank you for the opportunity to testify and I am pleased to answer any questions you may have.